

IN THE CLAIMS:

Claim 1. (currently amended) An isolated nucleic acid molecule comprising nucleotide sequences, which encodes a fluorescent or chemo protein, having at least 85% identity with an amino acid sequence selected from the group consisting of SEQ ID NOs: 2, 4, 6, 10, 12, 14, 16, 18, 20, and 22:

~~(a) a nucleic acid which encodes a protein comprising the amino acid sequence as shown in Seq ID NOs: 2,4,6,8,10,12,14,16,20 or 22;~~

~~(b) a nucleic acid comprising a nucleotide sequence as shown in SEQ ID NOs: 1, 3,5,7,9,11,13,15,17,19 or 21;~~

~~(c) a nucleic acid that hybridizes under stringent conditions to the nucleic acid of (a) or (b) above;~~

~~(d) a nucleic acid that encodes a protein that has at least about 75% sequence identity to the amino acid sequence of (a) above;~~

~~(e) a nucleic acid that has at least about 70% sequence identity to the nucleotide sequence of (b) above;~~

~~(f) a nucleic acid which encodes a protein having at least one amino acid substitution, deletion or insertion in the amino acid sequence as shown in SEQ ID NOs: 2,4,6,8,10, 12,14,16,18,20 or 22;~~

~~(g) a derivative or mimetic of the nucleic acid of (a), (b), (c), (d), (e), or (f) above;~~

~~(h) a mutant of the nucleic acid of (a), (b), (c), (d), or (e) above;~~

~~(i) a nucleic acid which differs from the nucleic acid of (b), (c), (d), (e), (f), (g) or (h) above due to the degeneracy of genetic code; and~~

~~(f) a fragment of the nucleic acid of (a) or (b) above encoding a peptide of at least 15 amino acid residues in length.~~

Claims 2 to 4 (cancelled)

Claim 5. (original) A vector comprising the nucleic acid molecule according to claim 1.

Claim 6. (currently amended) An expression cassette comprising

(a) a transcriptional initiation region that is functional in an expression host;

(b) the nucleic acid molecule according to claim 1; and

(c) and a transcriptional termination region functional in said expression host

~~(a) the nucleic acid molecule according to claim 1; and (b) regulatory elements for the expression of said nucleic acid molecule in a desired host cell.~~

Claim 7. (currently amended) A host cell or progeny thereof, comprising the expression cassette according to claim 6 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell ~~the nucleic acid molecule according to claim 1.~~

Claim 8. (currently amended) A transgenic stable cell, or progeny thereof, line comprising the nucleic acid molecule according to claim 1.

Claim 9. (withdrawn) A transgenic plant comprising the nucleic acid molecule according to claim 1.

Claim 10. (withdrawn) A transgenic animal comprising the nucleic acid molecule according to claim 1.

Claim 11. (currently amended) A method for producing a fluorescent protein, said method comprising (a) providing an expression cassette nucleic acid molecule according to claim 4 6; ~~operably linked to suitable expression regulatory elements~~ (b) expressing the fluorescent ~~or chro~~me protein from said the nucleic acid molecule, and (c) isolating the protein substantially free of other proteins.

Claim 12. (cancelled)

Claim 13. (withdrawn) A nucleic acid molecule having a sequence that is substantially the same as, or identical to a nucleotide sequence of at least 300 residues in length of the nucleic acid molecule according to claim 1.

Claim 14. (withdrawn/currently amended) An isolated fluorescent ~~or chro~~me protein that is encoded by the nucleic acid molecule according to claim 1 ~~selected from the group consisting of~~

(a) ~~a protein comprising the amino acid sequence as shown in SEQ ID NOs: 2,4,6,8,10,12,14,16,18,20 or 22;~~

~~(b) a protein encoded by the nucleic acid molecule comprising a nucleotide sequence as shown in SEQ ID NOs: 1,3,5,7,9,11,13,15,17,19 or 21;~~

~~(c) a protein that has at least about 75% sequence identity to the amino acid sequence of (a) or (b) above;~~

~~(d) a mutant of the protein of (a), (b) or (c) above;~~

~~(e) a protein having at least one amino acid substitution, deletion or insertion in the amino acid sequence as shown in SEQ ID NOs: 2,4,6,8,10,12,14,16,20 or 22;~~

~~(f) a derivative of the protein of (a), (b), (c), (d) or (e) above;~~

~~(g) a fragment of the protein of (a), (b), (c), (d), (e) or (f) above comprising of at least 15 amino acid residues in length; and~~

~~(h) a protein having a sequence that is substantially the same as, or identical to the amino acid sequence of at least 100 residues in length of (a) or (b) above.~~

Claim 15. (withdrawn) A fusion protein comprising the protein according to claim 14.

Claim 16. (withdrawn) An antibody specifically binding to the protein according to claim 14.

Claim 17. (currently amended) A kit comprising at least one the nucleic acid molecule according to claim 1 ~~or a means for producing the same.~~

Claims 18 to 26 (cancelled)

Claim 27. (new) The nucleic acid molecule according to the claim 1 which encodes a

fluorescent protein which has at least 85% identity with the amino acid sequence of SEQ ID NO: 10.

Claim 28. (new) The nucleic acid molecule according to the claim 1 which encodes a fluorescent protein selected from the group consisting of SEQ ID NOs: 2, 4, 6, 10, 18, 20.

Claim 29. (new) A isolated nucleic acid that hybridizes under stringent conditions to the nucleic acid of claim 26, wherein said nucleic acid encodes a fluorescent protein.

Claim 30. (new) The nucleic acid molecule according to the claim 1 which is selected from the group consisting of SEQ ID NOs: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, and 21.